DOCUMENT RESUME

ED 139 757 SP 011 054

AUTHOR	Kangasniemi, Erkki
TITLE	A Review of Research Into Comprehensive Education in Finland. Information Bulletin No. 1.
INSTITUTION	Finnish National Board of Education, Helsinki. Research and Development Bureau.
PUB DATE	77
NOTE	33p.; Not available in hard copy due to marginal legibility fo the original document; Paper presented at the European Contact Workshop (Austria, December 13-17, 1976)
EDRS PRICE	MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	Comprehensive Programs; Educational Innovation; *Educational Research; *Elementary Secondary Education; Equal Education; Foreign Countries; *National Programs; *Organizational Change; *Organizational Effectiveness; *Public Schools
IDENTIFIERS	*Finland

ABSTRACT

Research results are collated and presented concerning the change in Finland from a binary system of education to a more unitary system, the "comprehensive school," involving a single primary school (grades one through nine) and a choice between vocational and senior secondary school (grades ten through twelve). The new system, being implemented on a nationwide basis, is described in relation to that existing previously, and research results are presented concerning (1) the conception and development of the "comprehensive school" idea, (2) progress toward equality of educational opportunity, (3) grouping procedures and their flexibility, (4) academic achievement of pupils, (5) affective achievement of pupils, and (6) new, system-centered problems. Advantages and disadvantages of "comprehensive education" as revealed in the research are discussed, and an outline of the decision-making process for research conduct and finance is presented. Thirty-nine studies are cited in the reference list, and a glossary of terms unique to the "comprehensive system" is presented. (MB)

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NO 1, 1977

A REVIEW OF RESEARCH INTO COMPREHENSIVE EDUCATION IN FINLAND

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FOREWORD

This report was prepared by Mr Erkki Kangasniemi for the European Contact Workshop which was held from 13th to 17th December, 1976, in Austria and which was organised by the Council for Cultural Co-operation / Council of Europe. The members of the workshop considered experiment on the education of 10-14 year old pupils and research on curriculum evaluation.

The report is based on research work commissioned by the Finnish National Board of Education on the education of 10-15 year old comprehensive school pupils. Special attention is paid to areas of interest to the participants of the workshop. Besides, Mr Kangasniemi gives a brief survey of the comprehensive school system and decision making on research work in Finland.

The writer of this paper, Mr Erkki Kangasniemi, is at this moment a research worker at the School Research Department of the Institute for Educational Research, University of Jyväskylä. During the years 1973-1975 he was head of the same department.

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1. SYSTEM OF COMPREHENSIVE EDUCATION AND EXPERIMENTS OF COMPREHENSIVE EDUCATION IN FINLAND

The basic school in Finland is a 9-year comprehensive type school, which gives general education to the whole age-group. The basic school, hereafter called the comprehensive school[2)], in a sense combines the primary school, the civic school and the junior secondary school of the older binary school system[1)] into one school. The first six grades of the comprehensive school constitute the junior or lower stage, where most of the teaching is given by class teachers; the last three grades constitute the senior or upper stage where teaching is given by specialist subject teachers. Teaching in the lower stage is in principle uniform to all pupils. In the upper stage there are sets[4)] ("level courses") in some subjects, which vary in terms of objectives and qualification for further studies[5)]. In the upper stage the pupils also can take some optional subjects according to their own choice.

Experimentation with the comprehensive education began at the beginning of the 1960's. It was mainly concerned with the structure of the upper stage. When the structure had been decided, the pedagogical experimentation started in 1967. In that year 11 upper stage comprehensive schools began to teach according to the interim comprehensive school curriculum. By 1970, when the comprehensive school curriculum was published, there were 26 experimental upper stages (Peruskoulukokeilu 1968-1969). About half of them were carrying out experiments in close contact with national educational authorities while the rest were carrying out "applied" experimentation under less close supervision and follow-up.

Most of the available research results on the comprehensive school have been obtained from the former group of experimental comprehensive schools. This is due to the fact that the nationwide implementation of the comprehensive school started first in 1972, when the northernmost part of the country and many experimental schools went over to the new school system. Transfer to the comprehensive system takes place in six stages and the Helsinki region is the last to do so in 1977. Since transfer in each municipality is done so that in the first year the five grades of the lower stage go over to the new system, the following year the sixth grade, etc., the comprehensive school is fully implemented in the whole country first at the beginning of the 1980's.

1), 2) etc., see Appendix

For the reasons mentioned in the above, information on the comprehensive school is not yet sufficiently representative. Since experimental comprehensive schools were set up at local initiative, they do not constitute a representative sample of comprehensive schools. It was, however, important to start research at the very beginning of comprehensive experimentation in order to get research-based information of e.g. the realizability of the curriculum. Such research-based feedback has made it possible to start work on the development of the comprehensive school curriculum immediately after its adoption.

In addition to research, the development of the comprehensive school has included experiments also after the pilot experimentation ended. These later experiments have been inductive in character. They have expressed the need felt by schools for the development of teaching. Experiments have been limited in scope and their national significance has also, so far, been limited. The analysis of the results of experiments has been done mainly on the basis of reports written by teachers responsible for the experiments. In recent years there have been attempts to establish better links between research and school experiments.

2. RESEARCH RESULTS CONCERNING THE COMPREHENSIVE SCHOOL

In presenting the results of Finnish research into comprehensive education it is reasonable to concentrate on the results concerning pupils aged 10 to 15, because the data dealing with the school leaving stage (15-year-olds) are significant if an overall picture is to be obtained. The first three grades (7 to 9-year-olds) can consequently best be excluded from this report. The following presentation is not exhaustive. It focusses on research results obtained in some areas considered most relevant from the point of view of the theme of the workshop.

2.1. Progress towards equality of opportunity

A central objective of the school reform in Finland in the planning stage in the 1960's was to raise the average educational level of the population and to create equal educational opportunities for everyone. A comprehensive type basic school is to be set up in the same way in the whole country and it is to be free both for the pupils and their parents so as to provide in principle equal opportunities for education to all pupils.

Each pupil and his/her parents are responsible for taking advantage of these equal opportunities. This responsibility is clearly manifested, for instance, in the choice of sets and optional subjects to be studied by the pupil during the upper stage of the comprehensive school. The role of the pupil and his/her parents in the making of such a decision is strongly emphasized. Proper consideration is to be given to the pupil's abilities and possibilities of succeeding in the various sets. The various sets within given subjects have different objectives and, consequently, give different qualifications[5] for studies after the comprehensive school.

In the 1970's there have been demands that the comprehensive school should be developed so that all pupils who have completed it should have equal formal qualifications for further studies. In the further development of the comprehensive school it is emphasized, therefore, that it is important to guarantee a sufficiently high level of achievement of basic objectives ("common core"). There is a need to search for pedagogical means by which this objective could be reached. As will be noted later on, there are considerable differences between the levels of achievement in the various sets of the same subject in the upper stage, which is problematic e.g. from the point of view of further studies.

A theoretical study has examined educational differentiation as part of social differentiation (Piippo, 1973). Empirical studies have appraised what proportion of the age group in the experimental comprehensive schools has studied in accordance with a syllabus which roughly corresponds to the former junior secondary school syllabus and gives the pupils free access to all further studies. The results indicate that 75 % of the pupils who left the experimental comprehensive schools (15-year-olds) in spring 1971 (Suomalainen, J. 1971) and 74 % of those who left school in spring 1972 had obtained such a qualification (Kangasniemi, 1976). After the national implementation of the comprehensive school started in 1972 the corresponding figures for 1974 and 1975 were 63 % and 62 % respectively (Suomalainen, J. 1975). These figures differ clearly from the earlier ones. For the sake of comparison it is worth mentioning that in the former binary system in 1965 and 1969 41 % and 51 % of all 15-year-olds, respectively, were in the final grade of the junior secondary school (Sysiharju, 1972). In five years the proportion of junior secondary graduates had increased by 10 percentage units in the former binary system. It may be said that along with the implementation of the comprehensive school the proportion of pupils possessing equal opportunity

of education has increased in comparison to the binary school system. This increase is, however, not solely due to the comprehensive school system since it is in line with the trend before school reform.

2.2. Grouping procedures and their flexibility

There is no research into the grouping of pupils in the lower stage. The Comprehensive School Act and the Comprehensive School Curriculum outline grouping procedures. During the lower stage all pupils in principle have common objectives. Classes may not be formed on the basis of any selection criteria. The curriculum states that common objectives are to be sought by pedagogical means and groupings within the class may not be permanent. This is a form of the differentiation of teaching[8], which should not have direct differential effects on studies during the upper stage. The Act permits the splitting up of a class of 25 or more pupils into two groups taught separately in the case of mother tongue, mathematics and foreign language in grades 3 and 4. The only criterion for grouping is the size of the class; it is not known whether in practice pupils' achievements have been used as a basis for grouping Splitting of a class is an instance of a relative permanent grouping procedure. Remedial teaching is one way of organizing small group instruction in the comprehensive school. In summary it may be said that, in principle, the grouping of pupils is flexiple in the lower stage of the comprehensive school.

The classes may not be formed on the basis of any selection criteria during the upper stage, either. Pupils may be divided into sets and optional subject groups in those subjects where such a choice exists. According to plans, it is the task of the school to give information and guidance with regard to the choice of each pupil's study programme[6] in the upper stage. The pupils and his/her parents have to choose for the 7th grade study programme one of three sets in the first foreign language, one of two sets in mathematics and similarly one of two sets in second foreign language[4]. The choice of sets in the three subjects is indipendent of each other so that a pupils's potential intraindividual differences are taken into account. In addition, they may choose 2 - 3 optional subjects starting with the 8th grade (earlier in 7th grade). With a view to helping the pupil and the parents in the choice of sets, in particular, the lower stage school gives each pupil a recommendation of sets. If possible, the school is required to carry out the decision made by the pupil and his/her parents.

According to an investigation (Kangasniemi, 1972b) conducted in the experimental comprehensive schools the parents have received most of the information concerning the choice of the study programme in the upper stage from their own children, from information brochures, from teachers and from mass media. The pupils reported that they had received most information from their own teachers, information brochures, parents, upper stage pupils and mass media in that order. Parents were better informed than pupils about the effects of the study programme on qualifications for further studies, whereas the pupils were better informed on the number of sets. The study (Kangasniemi, 1973) indicates that decisions on the choice of sets were in 89 % of all cases in accordance with the school's recommendation. Most of the cases in which the school's recommendation is not followed are such that the pupil and his/her parents chose a higher set than recommended. The schools have carried out 94 % of all decisions made by the pupil and his/her parents.

Most important factors affecting the level of the study programme in the upper stage are earlier school success, ability, the pupil's educational aspiration, sex and the pupil's and his/her parents' knowledge of the differentiation of teaching in the upper stage (Kangasniemi, 1976). There are also social differences between the sets, the pupils of upper sets having on the whole a better social background. Those pupils who have been exempted from foreign language study do not differ from other pupils in terms of the socio-economic status of the home but the educational attitudes of the home are less positive.

According to directives the pupil and the parents have a central role in the choice of the study programme. The school can, however, change the pupil's study programme during the upper stage if the choice has proved to be misguided. It is partly due to this that mobility from one set to another has been more frequently downwards than upwards (Kangasniemi, 1976); the criteria of downward shift have been stated more explicitly and the school can, therefore, more easily control the shift to lower sets. Another reason for this is that at the beginning of the upper stage most pupils have chosen a study programme consisting of high sets. Mobility from one set to another is most common in connection with the transfer from the 7th to the 8th grade. The results also indicate that the change of sets is least common in the second foreign language, in which there are two sets throughout the whole upper stage. The relatively small flexibility may also be due to the fact that in the second foreign language change of set is directly tied up with qualification

for further studies. - About 40 per cent of pupils in an agegroup have changed sets at least once during the upper stage in 1969-1972. The results indicate that change to an easier set during the upper stage is influenced by a poor academic success, whereas upward mobility is mainly due to the pupil's wish to transfer to a higher set rather than good performance in the subject.

Transfer from one set to another naturally causes changes in the composition of groups and increases the need for the individualization of teaching. Research results indicate that the higher the set the smaller is the turnover of the set. Change of optional subjects after each school year during the upper stage is very frequent (Kangasniemi, 1976). This follows that pupils in a group studying a given optional subject may have a rather divergent background in the study of it.

It was stated in the above that sex is a factor which influences the level of study programme and the grouping of pupils. Girls have usually studied in higher sets than boys in the comprehensive school. A considerably larger proportion of girls possess better qualifications for further studies than do boys after the comprehensive school. It can be noted in this context that 60 % of comprehensive school leavers entering the senior secondary schools have been girls (Kangasniemi & Suomalainen 1974).

2.3. Academic achievement of pupils

Evaluation of the academic achievement of pupils started in 1967 at the same time as comprehensive school experimentation on the basis of the interim curriculum started. One of the implicit tasks of testing was to map the potential differences between the performance of comprehensive school pupils and of their likeage peers in the junior secondary school. Testing expanded at the beginning of the 1970's and its scope was also extended to cover the planning, development and production of centrally administered achievement tests. Evaluation in a more strict sense of the term was fairly limited owing to the lack of adequate statement of objectives and to the fact that it was not valid to draw far-going conclusions on the basis of the results obtained by a few experimental comprehensive schools. One of the aims of testing and evaluation was to start the building up of an item bank, from which it would be possible to obtain good items for central tests.

Gradually focus shifted increasingly to the assessment of the attainment of objectives and to the development of the curriculum. The assessment of the

attainment of objectives was still hampered by the relative non-specificity of objectives. Consequently the need of a clearer indication of basic objectives ("common core") was pointed out by those carrying out evaluation research. The need of clear basic objectives was strongly expressed also in other contexts (e.g. some committees) and this resulted in the channelling of evaluation resources to curriculum development directly. The number of tests has decreased in recent years and more attention has been given to the grounds of centrally administered tests (Leimu & Saari 1976). In 1975 and in the first half of 1976 the resources for the R & D work on evaluation were used for the structuring of the objectives and for the definition of basic ("common") objectives and contents in the mother tongue, foreign languages and mathematics.

The evaluation of school achievements has been carried out mainly in the above-mentioned subjects both in the Finnish and Swedish speaking comprehensive schools. At first the evaluation was carried out in experimental comprehensive schools and from the school year 1973-74 onwards a sample of comprehensive schools has been used. Centrally produced and administered tests have been carried out in grades 3 through 9, most frequently in the sixth and ninth grades, i.e. at the end of the lower and upper stages of the comprehensive school, respectively. For the purposes of tentative comparisons, classes of the binary system's primary schools and junior secondary schools have also participated in the tests.

Evaluation studies have indicated, for instance, that the pupils in the final grade of the junior secondary school have performed better in the tests of mother tongue than the ninth graders of the comprehensive school (there are no sets in the mother tongue in the comprehensive school) (Koppinen 1971). The tests have also been designed to assess the mastery of various sub-areas of the mother tongue. The results (Hämäläinen, et al. 1973) indicate that ninth graders have understood prose text and graphical representations fairly well and they have had a fairly good knowledge of sentence structure, vocabulary and abbreviations. Knowledge of parts of speech and spelling conventions has been inadequate (Vähäpassi, 1975).

For practical reasons pupils' achievements in foreign languages have been evaluated mainly with regard to receptive skills. The skills and elements tested have usually been vocabulary, structures, reading comprehension and listening comprehension. It has been concluded that pupils' knowledge of vocabulary and structures at the end of the lower stage (in the 6th grade

after three years' studies) has clearly fallen short of the requirements stated in the curriculum (Takala, 1973; Havola-Pitkänen, 1974). The results of listening comprehension, on the other hand, have been relatively good. The results of reading comprehension tests showed that pupils answered satisfactorily to about half of the questions based on the text. Pupils can fairly well solve questions answers to which can be found straight from the text. Questions demanding interpretation proved difficult to fifth and sixth graders (Havola-Pitkänen, 1976). In the final (ninth) grade the pupils have again obtained best results in listening comprehension, which is a central objective of FL teaching in the comprehensive school. However, the need of improvement in the knowledge of vocabulary and structures is clearly indicated, since they are essential elements in language comprehension and production. The differences between sets at the upper level are considerable (Takala 1971 and 1976) as the table in Appendix shows. From the point of view of the starting age of FL study it is interesting to note that at the end of grade nine the pupils studying Swedish as their second foreign language (long course) had obtained better results than intermediate course pupils who had studied Swedish as their first foreign language (three years with a total of 12 weekly lessons vs. seven years of study with a total of 19 weekly lessons). Similarly the results obtained by short course pupils were approximately equal to those of general course pupils (Takala, 1973).

The tests in mathematics have been designed so that different content areas have been included in successive tests at the same grade level. However, for the purpose of comparison one of the content areas has been included in all tests as an anchor unit. The results indicate that on the whole objectives have been reached relatively well according to criteria defined in connection with the planning of the tests (Puro, 1971). In the reporting of results special attention is usually given to those subareas in which the average level of knowledge is weak (Korhonen, 1975a and b). The differences between the various sets in grade 7 have been obvious. In grade 9 the percentages of correct answers are higher in higher sets; items are solved by appropriate application of rules and not by guessing and the proportion of unanswered items decreases. Thus knowledge is deeper in higher sets (Pasanen, 1972).

In foreign languages and mathematics the achievements of the advanced (extensive) course pupils have been better and those of the intermediate course pupils inferior to the achievements of the junior secondary school pupils. Great differences were found between pupils and schools. The best results

had been obtained in the experimental comprehensive schools in those municipalities where simultaneous transfer to the junior secondary schools was less common (Takala, 1976). By having tests in the experimental comprehensive schools and in junior secondary schools it has been possible to obtain a better picture of the achievement of objectives by the entire age-group.

The evaluation of school achievements is closely connected with the ongoing experiment and study of new forms of pupils evaluation and reporting of school achievements (Korpinen, 1976).

2.4. Affective results

Results concerning the affective domain reported here cover the comprehensive school pupils' study plans, school motivation, self-image and study attitudes.

Pupils' study plans. In study plans it is possible to distinguish pupils' own educational aspiration and the parents' expectation in regard of their children's educational career. When sixth graders in the experimental comprehensive schools (aged 12) were asked what they were planning to do after the comprehensive school, it was found out that they thought of going to work or staying at home more often than their parents expected them to do. Parents in turn expected their children to enter the vocational school or the senior secondary school more often (75 %) than the pupils indicated to be their intention (69 %). According to another study (Kilpeläinen, 1975) one third of ninth graders in the experimental comprehensive schools (school year 1970-71) intended to go to the senior secondary school, another third to the vocational school and another third intended to go to work or stay at home. Of these school leavers 61 % had plans of continuing studies after the comprehensive school.

In addition to the academic success the pupils' educational aspiration appears to influence the level of their study programmes in the upper stage (Kangasniemi, 1976). The pupils who in grade 6 reported that they were planning to go to the senior secondary school after the comprehensive school chose a higher-level study programme than the other pupils. According to another study (Kilpeläinen, 1975) the level of the study programme in the upper stage as well as the pupil's sex seem to have an effect on his/her aspirations concerning further studies. Pupils with a higher-level study program have relatively more often plans of further studies and boys more often

than girls. Girls more often than boys plan to go to the senior secondary school, while boys mention the senior secondary school and the vocational school about equally often as places of further study (Suomalainen & Kilpeläinen 1974).

In a study comprising the seventh grade of experimental comprehensive schools it was found out that the pupils from the highest social status homes expressed that they intended to go to the senior secondary school more often than other pupils. The parents of such children also expected their children to go to the senior secondary school more often than did other parents. Ability was very closely connected with plans of further studies. When ability was controlled, there was found to be no relationship between social background and plans of further studies (Löfman, 1972). Less able pupils who had expressed a wish to go to the senior secondary school received clearly more encouragement and help from their parents than did more able pupils with similar plans.

School motivation. Motivation has been used both as an independent and a dependent variable in studies dealing with the comprehensive school. Research results (Kangasniemi & Mäki-Rahkola 1975) indicate that school motivation has a positive effect on the school marks of lower stage pupils (aged 10-12) although differences are not significant. Motivation is not a prominent predictor of choice of sets. With regard to the study of the first foreign language in grade 7 it was found that only the pupils in the highest set differed significantly from the pupils of other sets in view of school motivation (Kangasniemi, 1976). The pupils' educational aspiration and school motivation seem to direct them to choose a course (set) in the first foreign language which is higher than the intermediate course; it will be recalled that intermediate course is sufficient to give the pupils unlimited qualification for further studies.

School motivation has some effect on pupils' transfer to further studies. The pupils who went to the senior secondary school were found, when measured in grade 9, to have a higher than average school motivation, those who went to vocational school had average motivation, and those who went to work had a below average school motivation (Kilpeläinen, 1975).

Studies in which motivation has been used as a dependent variable have indicated that girls and high achievers have had higher motivation (Kilpeläinen, 1975; Mäki-Rahkola, 1973a; Saari, 1972). Several studies have also attempted to elucidate the effect of the school timetable on school

motivation. The research problem has been to study the influence of a form of concentrated teaching[10] ("Epochenunterricht", "periodläsning") on motivation in general and changes of motivation during periods of concentrated teaching. As control groups in the study of motivation in general have been used ordinary classes, which follow the traditional distributed timetable[11]. Some of these studies have the weakness of containing too few measurements and the fact that measurement has taken place at the beginning and end of the school year. Measurements carried out at the upper stage showed that school motivation was high in the initial measurement and there were no appreciable changes in either group (Mäki-Rahkola, 1973b).

In the study of motivation changes during a period of six weeks (several repeated measurements) it was shown that motivation associated with school success declines more in less successful pupils than in high achievers (Mäki-Rahkola, 1973a).

Concentrated study is generally found pleasant. The attitude is more positive among high achievers. The originally positive attitude of low achievers declines during the period and rises almost to the original level at the end of the period. Attitude towards different school subjects declines during the period and rises towards the end. The high achievers have a more stable attitude towards school subjects, whereas the originally positive attitude of weaker pupils deteriorates during the period and there is a sharp decline at the time of the change of period. Weaker pupils in a sense find the period more stressing (Saari, 1972).

Self-image. In a study of change and differences in the pupils' self-image and in parents' expectations concerning their children's future study career at the time of the choice of sets it was noted (Lahti, 1973) that if there was s discrepancy between the pupil's self-image and his/her parents' expectations the parents rated their child's school ability higher and chose a higher set than the pupils himself/herself. The pupils' self-image improved during the period of choosing sets and final measurement showed that the observed discrepancies decreased.

The possible effect of change of set during the upper stage has also been studied and the results have indicated that those pupils who have changed their sets regarded themselves as below average in comparison to the self-assessment of those pupils who did not change their sets (Kangasniemi, 1976). The study did not control the direction of the change (upwards vs. downwards).

In a study of remedial teaching (pupils aged 7 - 10) it was found that it may have a negative effect on the pupil's self-image and increase his/her anxiety. It is not clear what there is in remedial teaching that has this negative influence (Puro, 1977).

Study attitudes. The attainment by the sixth and ninth graders of the objectives of study skills have been studied (Hämäläinen, 1973). Study skill was divided into three sub-areas: (1) study hygiene (need of sleep and rest, study environment, study habits), (2) study attitudes, and (3) study technique (acquisition, structuring, application of knowledge etc.). It was found out that main emphasis is laid on study technique in the comprehensive school curriculum; there are relatively more objectives concerning it. Positive study attitudes are mentioned only when the overall objectives of the comprehensive school are presented. In the above study attitude was divided into 12 areas, for instance, valuation of school, desire to acquire knowledge, interest in social questions, interest in aesthetics, etc. The results indicate that study attitudes were positive in all 12 areas in both grades. Ninth graders had significantly more positive attitudes towards the development of thinking ability, the study of social questions, the study of ethical and social problems, and education in communication. The pupils found school important and worthwhile rather than pleasant. Negative attitudes towards the school were reported by 5 - 8 % of pupils.

2.5. Problems created

The transfer to the comprehensive school system has not taken place without creating any problems. The importance of objectives has been stressed during the reform. However, the objectives of the comprehensive school curriculum are rather vague and do not, therefore, provide sufficient guidelines to teaching and learning. Besides, the objectives of various subjects are very exacting. To alleviate the latter problem there has been prepared a draft for the basic objectives in the teaching of the mother tongue, foreign languages and mathematics.

At the very beginning of the comprehensive school experimentation it was ascertained that there are considerable differences in the learning outcomes of the different sets (see Appendix, Table). In addition, in school year 1975-76 1,4 % of the ninth graders had been exempted from the study of the first foreign language and 2 % from the study of the second foreign language.

30 % of ninth grade pupils were in the general course in the first foreign language, 24 % in the general course in mathematics, and 32 % were in the short course in the second language (Suomalainen, J. 1975). About 38 % of comprehensive school leavers obtained only a limited qualification for further studies in 1974-75. These problems give rise to demands for the development of the comprehensive school when the aim is to give all pupils real opportunities for all further studies after the comprehensive school.

It was mentioned in the above that a larger proportion of boys than girls lose part of their qualification for further studies during the upper stage of the comprehensive school. Boys are more often in lower sets and move downwards more often during the upper stage. In school year 1973-74 71 % of girls and 54 % of boys obtained a school leaving certificate which gave them unlimited access to further studies (Suomalainen, J. 1975). In this age-group 60 % of pupils eligible to enter the senior secondary school were girls and 40 % boys.

Exemption from the study of foreign languages has diminished considerably. It has been difficult in practice to organize meaningful activities for pupils exempted from foreign language study (Kangasniemi, 1972). For this reason, exemption has caused disciplinary problems in schools but also other problems have occurred. The earlier school achievements of the exempted pupils may be comparable to those of pupils in the general courses and short courses but the educational attitudes of the home may be less positive. When a pupil and his/her parents apply for exemption from the study of foreign languages, they do not fulfil the school's expectations concerning the pupil's study career.

The arrangement of remedial teaching continues to be a problem. The placement of remedial teaching within the normal school day is difficult. If remedial teaching lengthens the school day, it is felt as burdensome both by pupils and teachers (Kero, 1972; Ylitalo, 1973). Also the lack of suitable material is felt to be a hindrance to the giving of remedial teaching. When such material has been supplied to teachers, the pedagogical problems of remedial teaching have come to the fore (Puro, 1977). School transportation has also restricted the possibilities of arranging remedial teaching.

Truancy is a current problem, although the situation is not the most serious in the comprehensive school. Studies have shown that the amount of truancy is affected by the pupil's age and the type of school. The pupils have gene-

rally considered the lack of school motivation to be the main cause of truancy Those pupils who have themselves played truant have reported that their absence from school has been mostly due to the fact that they have found the school to be of no use. Older pupils have judged teaching more critically than younger ones. Teachers have regarded weak school motivation as the most common cause of truancy (Kolari, 1975).

Besides truancy, there have occurred disciplinary problems in schools. Teache have felt the pupils' aggressive behavior, resistance to authority, and disturbances of orderly classroom routine as a more serious problem than have school psychologists. Personality problems were not noted very often by teachers (Aho, 1975).

The continuous changing of optional subjects during the upper stage of the comprehensive school has brought about a situation in which the study of a given optional subject has been short (Kangasniemi, 1976). The pupils obtain different short-term learning experiences but learning outcomes may be slight. On account of electivity and mobility sets and optional subjects have created problems in the preparation of the school timetable.

3. ADVANTAGES AND LIMITATIONS OF COMPREHENSIVE EDUCATION

One of the most obvious advantages of the comprehensive school is increased equality of educational opportunity. All pupils irrespective of their socioeconomic status and the location of their homes have the opportunity to obtain, in principle, basic general education of equal level. With the coming of the comprehensive school the position of the curriculum has been emphasized in the planning of teaching more than before. Cognitive objectives are less prominent in the comprehensive school, while the overall development of each pupil's personality is emphasized. Decisions about the level of the pupils' study programmes are not final and may be changed during the upper stage. Pupils may move from one set to another within the same school. Since the comprehensive school is identical throughout the whole country, mobility does not in principle make a change of school difficult.

As another advantage has been cited the fact that comprehensive school pupils do not have to do extra studying during the summer or repeat the same grade as often as in the binary school system. In order to avoid independent extra study in the summer and/or grade repeating the pupil may instead move to a lower set. A disadvantage of this is that the pupils is not given (or persuaded to take) an opportunity of trying again; the problem is solved in a way which is "easy" and mechanical from the point of view of the school and the pupil. Later on the pupil may find that he/she has lost some opportunities to continue studies after the comprehensive school. The pupil is, however, entitled to repeat a grade in the comprehensive school if his/her achievement is weak, and some pupils at least in the upper stage take advantage of this opportunity in order to ensure a better access to further studies (Suomalainen, 1971).

The fact that there are great differences in pupils' achievements even in grade 6 may be regarded as a factor which gives rise to questions about the attainment of the educational policy objectives set for the comprehensive school. In practice this means that all pupils do not have equal possibilities of choosing the study programmes they will be following during the upper stage. Similar differences obtain at the end of the comprehensive school and they have a decisive effect on access to further studies. In practice, the comprehensive school has strongly limited boys' opportunities for further studies.

During the upper stage the school divides the fast learners from the slow learners by means of the system of sets, but it is not in a position to give adequate support to the slow learners. On the other hand, the school is not able to pay sufficient attention to academically stronger pupils in the lower sets who might be able to succeed in a higher set as well. In the latter instance an able pupil may lose part of his/her qualifications for further studies because he/she has not studied in a set which corresponds to his/her abilities.

One limiting factor is the fact that the setting up of the upper stage and the provision of good teaching and several optional subjects presupposes a sufficient population and thus favours large municipalities. Small municipalities share the upper stage staff and facilities but this means that many pupils from 13 onwards have to travel a long way during the upper stage. Thus it has not been possible to wholly remove the geographical differences and limitations.

Problems created have been studied and are being studied. Several committees and working parties have considered possibilities and means for their removal, for instance, in connection with the planning of the new structure of the secondary level education.

4. METHODOLOGICAL PROBLEMS

The setting up of experimental comprehensive schools was followed by the creation of a system of follow-up research to assess the degree of implementation of the curricular objectives. There have also been some theoretical studies. It has not been possible to establish truly experimental conditions even in studies with pre- and post tests or several repeated measurements. The researcher has been obliged to accept the limitations of available variation.

In each study the relevant variables and their measurement have been defined in accordance with the research problem. The problem of validity has been the most difficult of all problems of measurement. Practical problems often have limited possibilities of measurement. There have not been unambiguous criteria of validity and, on the other hand, there have been several criteria. Thus in centrally administered tests it was necessary in the absence of sufficiently clear objectives to analyse the contents of each course and thereby to operationalize the objectives of teaching and measurement. Teachers have also been asked to judge how well the tests have corresponded to teaching. These measures have been taken to ensure the content validity of tests. Another method has been to take advantage of earlier behavioral research in the operationalization and measurement of a given concept. Thus, for instance, school motivation has been measured by means of a test constructed along the lines of the semantic differential; attitudes towards the school have been measured by means of pairs of affective adjectives, whose use in attitude measurement is based on a theory of attitudes. A third method of ensuring validity has been negotiations with teachers concerning what they or pupils understand to be the operational meaning of a concept or what term they use to designate a given phenomenon.

Methods of measurement have often proved problematic. Thus it has seldom been possible to test the pupils' speaking skill of foreign languages because it cannot be done by means of a paper-and-pencil group test. In practice only the receptive skills have been assessed.

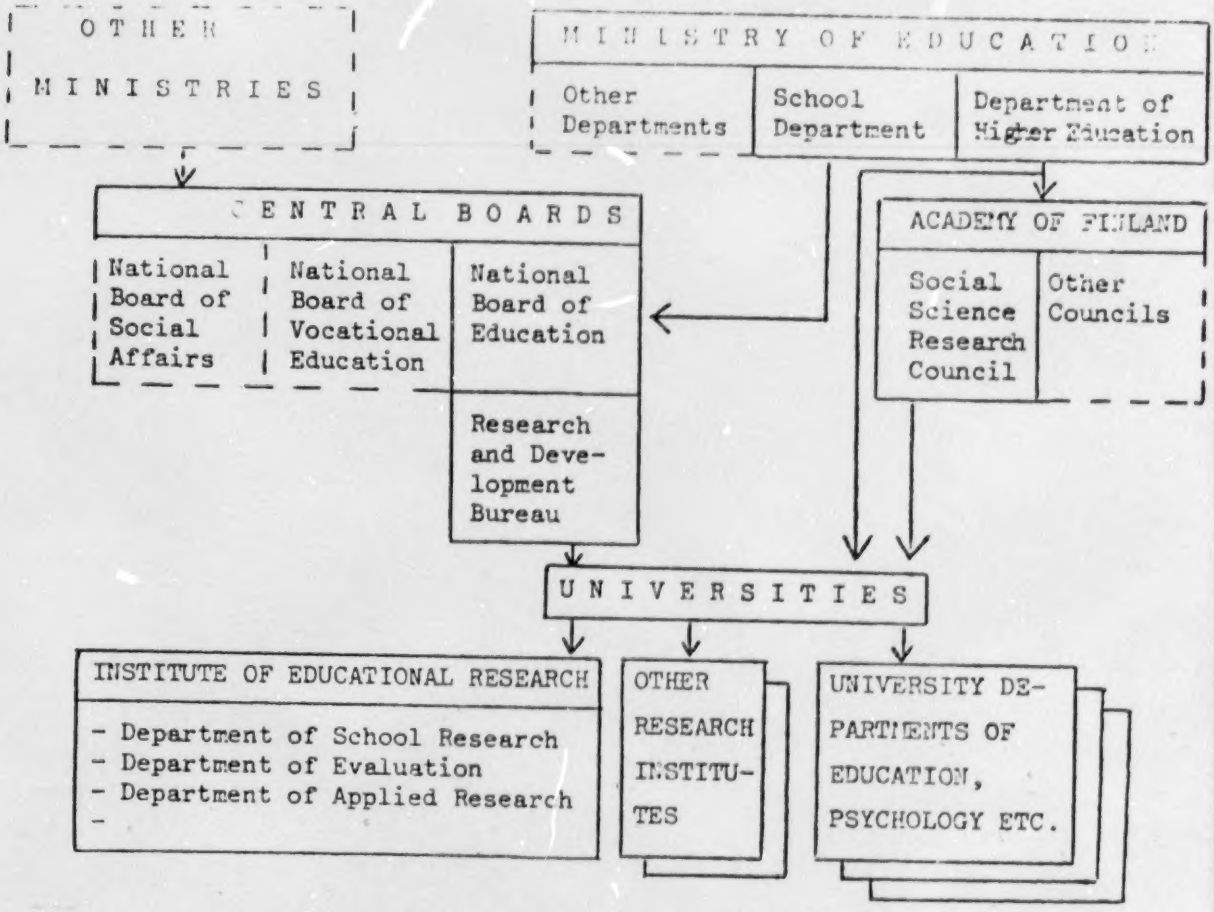
The representativeness of results is another problem. In the early stages of research into comprehensive school education a judgement sample of experimental comprehensive schools was usually taken. When transfer to the comprehensive school started in 1972, a sample of comprehensive schools has generally been used. The obtained samples have not been representative of the whole country, however, which has to be kept in mind in making conclusions. Research findings have nevertheless contributed to public discussion about the comprehensive school. In assessing the role of research in educational reforms it should be considered whether it is possible to transform policy decisions directly into administrative measures or whether there should be a period of R & D work supported by educational research before administrative regulations about pedagogical activities are given.

5. DECISION MAKING, RESEARCHERS AND FINANCING OF RESEARCH

The Ministry of Education is the highest authority in matters concerning research into comprehensive education and it makes decisions on research projects. The National Board of Education is an agency subordinate to the Ministry and responsible for planning, implementing decisions and giving expert opinions. The Board has a special Research and Development Bureau. Different research institutes (e.g. those linked to the universities of Jyväskylä, Joensuu and Tampere), university departments of education, psychology etc. prepare proposals for research projects and carry out projects.

The Department of Higher Education of the Ministry of Education approves the budgets of universities, research institutes and the Academy of Finland and thus by creating teaching and research positions influences their capability of carrying out research. The Social Science Research Council of the Academy gives grants also to educational research but it does not conduct research itself.

The attached figure illustrates the decision making structure and the institutions that carry out research into comprehensive education in Finland.



A large part of research into comprehensive education is so-called commissioned research carried out with funds allocated for a year at a time in the budget of the R & D Bureau of the National Board of Education. Each year the National Board of Education, particularly its R & D Bureau, submits a list of research tasks which are associated with its development plans and which research institutes and university departments may wish to undertake. The latter prepare project proposals and budgets and submit them to the National Board of Education, which examines them and gives an opinion on them. The Ministry of Education makes decisions about research (especially commisioned research) to be carried out during each budget year. The National Board of Education informs the universities of the decisions and in the event of a positive decision concludes a research contract with the university. The research funds of the National Board of Education in the national budget of 1976 were smaller than in the previous year.

In addition to contract research, the research institutes and university departments of education, psychology, social policy etc. can conduct research into comprehensive education with the funds (staff) allocated to them in the budget. There are relatively few actual research positions in university departments. Many M.A., Licenciate and Ph.D. theses on comprehensive education are carried out at university departments as a part of their own research program.

The staff of university departments can also submit research proposals to the Academy of Finland. The Social Science Research Council awards grants, which may last up to three years. So far the Academy has contributed relatively little to research into comprehensive education.

6. SUMMARY

Transfer to a comprehensive type basic school is underway in Finland. One of the objectives of this reform is to create equal educational opportunities by removing geographical and economic obstacles of obtaining an education. - In the comprehensive school classes may not be selected groups. All pupils have common objectives during the lower stage, which are sought to be attained by pedagogical means and groupings within the class. In the upper stage the pupils can in some subjects choose a course (set) which corresponds to their manifested and expected performance. Different sets have partly same, partly different objectives. The pupils can also choose a few optional subjects. During the upper stage the pupils can change sets and/or optional subjects. Research findings show that change downwards is more common than upwards and that change of optional subject is more frequent than change of set.

Studies of academic achievement have been carried out mainly in mother tongue, foreign languages and mathematics. The results indicate on the one hand that the average performance of different sets (no sets in mother tongue) varies considerably but on the other hand there is some ovarlap in the distribution of results between the sets. According to the level of the study programme during the upper stage pupils belong either to a group with unlimited qualifications or to a group with limited qualifications for further studies after comprehensive school. This is, in fact, a type of differentiation of education[7]. Ability, educational aspiration, school motivation and the level

of study programme during the upper stage are related to plans of and to actual transfer to further studies. The study attitudes of comprehensive school pupils are positive - somewhat more positive among ninth graders than among sixth graders.

Of problems created in the implementation of the comprehensive school the following have often been identified: 1) the vagueness of the objectives of the curriculum, which means that they do not provide sufficient guidelines to teaching and learning, 2) the difficulty of arranging remedial teaching, 3) the considerable differences between the average achievements of different sets, which are problematic from the point of view of mobility and further studies.

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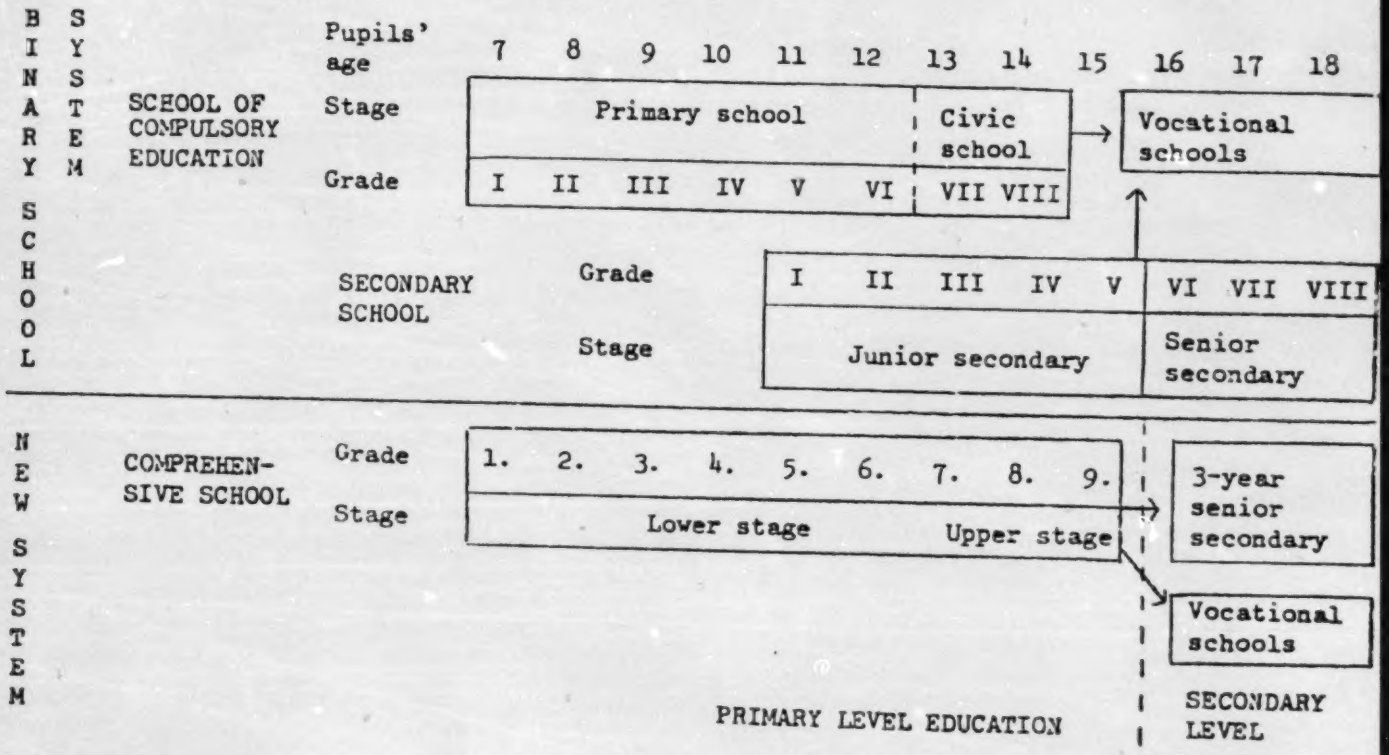
GLOSSARY OF TERMS APPENDIX

1. Binary school system (or parallel school system): school of compulsory education (primary school + civic school) and partly parallel to it secondary school (junior and senior secondary school).

1.1. There were two stages in the school of compulsory education, a six-year primary school and a two-year civic school. The pupils could go to the vocational school after the civic school.

1.2. There are two stages in secondary school: junior secondary and senior secondary. Generally part of the pupils transferred to the junior secondary school after the fourth year of the primary school. The junior secondary school was normally a five-year school. There have also been 4-year and 3-year junior secondary schools, which were entered after fifth and sixth year of the primary school respectively. After completing the junior secondary school pupils may have transferred to vocational education or to the senior secondary school. The latter lasts three years.



2. Comprehensive school is a nine-year basic school which gives general education to the whole age-group. The first six grades constitute the lower stage and the last three grades the upper stage.

After completing the comprehensive school the pupils may enter vocational schools or the senior secondary school, the planning of the reform of both of which started in full scale in 1974.

3. Teaching of mathematics and languages in the comprehensive school

3.1. The teaching of mathematics starts in the first grade and continues throughout the whole nine years; the same holds true of the teaching of the mother tongue.

3.2. The teaching of the first foreign language (i.e. language other than mother tongue, which in over 95 % of all cases is English, but may also be Swedish, and exceptionally German, French or Russian; In Swedish-speaking communities the first foreign language is Finnish) starts in grade 3 and lasts seven years.

3.3. The teaching of the second foreign language (Swedish or English in Finnish-speaking communities) starts in grade 7 and lasts three years. - For valid reasons the pupils may be exempted from the study of foreign languages.

4. Sets ("level courses") in the upper stage of the comprehensive school

4.1. There are three sets in the first foreign language: general course, intermediate course, and extensive (advanced) course.

4.2. There are two sets in the second foreign language: short course and long course. Earlier there was a considerable difference in the amount of lessons in the timetable between these two courses.

4.3. There are two sets in mathematics in grade 7: short course and long course, and three sets in grades 8 and 9: general course, intermediate course and extensive (advanced) course.

5. Qualification for further studies after the comprehensive school

5.1. Unlimited qualification for further studies: the pupil has formal competence, is eligible, to all further studies after the comprehensive school.

5.2. Limited qualification for further studies: the pupils has formal qualification to only certain branches or lines, e.g. is not eligible to enter the senior secondary school.

5.3. The pupil obtains unlimited qualification for further studies after taking at least the intermediate course in the first foreign language and mathematics and the long course in the second foreign language.

6. The pupil's study programme in the upper stage comprises compulsory subjects, study guidance and optional subjects. In addition to optional subjects pupils may in three compulsory subjects (cf. point 4 above) choose one of the available sets.

7. Differentiation of education (schooling): differentiation procedures which have a decisively differential effect on the formal qualifications provided by studies.

8. Differentiation of teaching: differentiation procedures, which ensure essentially the same formal qualification and possibilities for all pupils, for instance, as regards further studies.

9. Turnover of a set: the proportion in the set of pupils who have joined the set during a given period of time.

10. Concentrated teaching: The school year is divided into periods lasting, for instance, six weeks each. A given subject is studied, for instance, during three periods while other three periods are "empty". The sum of annual lessons are concentrated into three periods, which makes the study of the subjects concerned more intensive with "rest" periods providing rhythmic cycling of study. The number of subjects studied during a period is smaller than in the traditional type of study.

11. Distributed teaching: All subjects are studied throughout the whole school year, 2-3 hours a week. All subjects are studied simultaneously, i.e. during the same week.

TABLE. Means of correct answers (%) to identical items in the centrally administered tests in different sets in grade 9 of the comprehensive school

Subject, school year, subtest		Set				
		general course	intermediate course	advanced course	short course	long course
Mathematics	1971-72	27	42	69		
	1972-73	27	44	60		
English as first FL 1971-72	Vocabulary	63	90	98		
	Reading compreh.	67	88	96		
Swedish as first FL 1971-72	Vocabulary	59	78	93	52 [1]	84
	Reading compreh.	34	68	86	33	85

1) Swedish as second FL